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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,877	10/25/2001	Vijay Rajaram Harchekar	4752-105 US	7895

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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT PAPER NUMBER

1742

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,877

Applicant(s)

HARCHEKAR ET AL.

Examiner

George P Wyszomierski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20041001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Brook et al. (U.S. Patent 4,036,669), Melton et al. (U.S. patent 4,398,969), Tabei et al. (U.S. Patent 4,472,213), Tautzenberger et al. (U.S. Patent 4,554,027), Tabei (U.S. Patent 4,750,953), or the White et al. Journal de Physique article.

All of the above references disclose shape memory alloys including amounts of copper and zinc within the presently claimed ranges, and containing either exactly 6% aluminum (see Tabei et al. Table 1, examples 6 and 10, Tautzenberger et al. example 1, alloy C, Tabei Table 1, samples 3, 5, 10 and 11, or White et al. Table 1, alloy C-2) or an amount of aluminum approximating 6% (see Brook example 3 or Melton example 1). With respect to claims 3, 4, and 6, the examiner's position is that the shape memory at 575°C, the fatigue properties, and the shape memory response properties of the prior art alloys are "good", absent any numerical definition of these terms.

The prior art does not specify alloys having a lowered martensitic transformation temperature from an initial such temperature, and does not disclose the process steps recited in product-by-process terms in claim 1 as amended. However,

a) With regard to the lowered martensitic transformation temperature, this temperature is both composition and processing dependent, and it would have been well within the level of one of ordinary skill in the art to vary an aspect of the prior art alloys (e.g. by altering the amounts of copper and/or zinc but remaining within the prescribed ranges of each prior art document, or by

altering the heat treatment regimens prescribed in each prior art document) such that one achieves a lower martensitic transformation temperature in a given alloy.

b) With regard to the process steps, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524). In the present case, Applicant has not met this burden.

Consequently, a prima facie case of obviousness is established between the disclosure of Brook et al., Melton et al., Tabei et al., Tautzenberger et al., Tabei, or White et al. and the presently claimed invention.

3. In a response filed October 1, 2004, Applicant alleges that the claimed invention can be distinguished from the prior art because the prior art references do not disclose an alloy that has a lowered martensitic transformation temperature, and/or do not disclose the process steps as recited in claim 1 as amended. Applicant's arguments have been carefully considered, but are not persuasive of patentability because, as stated in the rejection supra, it would have been well within the level of one of ordinary skill in the art to lower the transformation temperature of the prior art alloys by at least some degree through manipulation of the compositions and processing steps disclosed in any one of the prior art references. Further, the process steps do not result in a patentable product in the absence of some actual physical difference between the products made thereby and similar (but differently processed) prior art products.

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4. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or suggest a Cu-Zn-Al shape memory alloy as claimed and having a martensitic transformation temperature lowered by about 80°C from an initial such temperature.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. Effective October 1, 2003, all patent application related correspondence transmitted by facsimile must be directed to the central facsimile number, (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GPW

December 9, 2004


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER